National Institute of Environmental Health Sciences

Visceral leishmaniasis in Tunisia: Spatial distribution and association with climatic factors

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Abstract:

Visceral leishmaniasis (VL) cases in children less than five years of age were recorded from 1996 through 2006 from Tunisian pediatric departments. Mean incidence rates were calculated for each of the 215 districts in the study area. Averages of annual rainfall and extreme values of low temperatures in winter and high temperatures in summer were used to characterize the climate of each district according to its continentality index and bioclimatic zone. A geographic information system and a local indicator of spatial association were used to summarize the spatial properties of VL distribution. Poisson spatial regression was performed to study the relationship between VL incidence rates and climatic parameters. We identified one hot-spot region of 35 inland districts located mostly in the semi-arid bioclimatic zone and two cold-spots located in coastal regions of the northeastern sub-humid zone and the southeastern arid zone. The incidence rate of VL was positively correlated with mean yearly rainfall and continentality index.

Source: http://www.ajtmh.org/content/81/1/40.long http://www.ncbi.nlm.nih.gov/pubmed/19556564

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Africa

African Region/Country: African Country

Other African Country: Tunisia

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Fly-borne Disease

Fly-borne Disease: Leishmaniasis

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Children

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content